

REMARKS

The last Office Action of June 15, 2006 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 15-29 are pending in the application. Claims 18, 20-21, 23-26, 27-29 have been amended. Claims 15-17 have been canceled. Claims 30-32 have been added. A total of 14 claims is now on file. No claim surcharge is due. Amendments to the title and the specification were made.

Applicant hereby certifies that neither the international application nor the designation of the United States was withdrawn or considered to be withdrawn prior to the filing date of the U.S. national (35 U.S.C. 111(a)) application. Claim 17 was objected to.

It is further noted that claims 15-29 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 15-18, 20-23 and 26-29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over by U.S. Pat. No. 6,652,254 to Shimura in view of U.S. patent No. 4,390,332 to Hendry.

Claim 19 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Shimura and Hendry as applied to claims 15-18, 20-23 and 26-29 above and further in view of U.S. Pat. No. 3,972,970 to Taylor.

OBJECTION TO THE TITLE

Applicant has changed the title to read --DEVICE FOR PRODUCING PHYSICALLY EXPANDED STRUCTURAL FOAMS DURING AN INJECTION MOLDING PROCESS INVOLVING THE USE OF DYNAMIC MIXING ELEMENTS --.

Withdrawal of the objection to the title is thus respectfully requested.

OBJECTION TO THE SPECIFICATION

With respect to the Examiner's objection to an alleged incorrect placement of the heading DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS before paragraph [0023], applicant disagrees with the Examiner since the preferred embodiments are being discussed beginning at paragraph [0023]. If the Examiner is of different opinion, applicant respectfully requests to be so advised.

The Examiner request for the deletion of the p.14 list was followed.

The Examiner required deletion of the reference to patent numbers in the body of the specification, in particular as in paragraph [0002]. Applicant has deleted the objected to reference.

CLAIM OBJECTION

The objected claim has been eliminated.

REJECTION OF CLAIMS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Applicant has canceled claims 15 and 16 to address the §112 rejection, thereby avoiding the rejection.

With respect to the dependency of claim 25 on claim "224", the typographical error has been corrected.

As a result of the above actions, the rejection under 35 U.S.C. §112, second paragraph becomes moot.

Withdrawal of the rejection of claims 15-29 under 35 U.S.C. §112, second paragraph is thus respectfully requested.

REJECTION OF CLAIMS 15-18, 20-23 AND 26-29 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER SHIMURA IN VIEW OF HENDRY; AND REJECTION OF CLAIM 19 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER SHIMURA IN VIEW OF HENDRY AND FURTHER IN VIEW OF TAYLOR

In view of the Examiner's grounds for rejection, applicant has canceled claims 15-17 and submits herewith new claims 30-32 to clearly point out the features of the present invention. In drafting the new claims, great care has been taken to distinguish the present invention from the invention disclosed by the various references and to overcome the rejection under 35 U.S.C. §112.

Applicant has replaced claim 15 by new independent claim 30, Claims 18, 20-

21, 23-26, 27-29, have been amended to change their dependency and to make them dependent on claim 30. Claims 31 and 32 claim additional features of the device such as the supply unit and the mixing capable shape of the mixing elements.

Shimura was cited as disclosing features of the rejected claim 15 except that Shimura did not teach a plurality of mixing elements, which are allegedly taught by Hendry.

Shimura shows a device where the blowing agent is supplied by a single supply opening (5) which supplies the blowing agent into the cylinder. Seen in Figure 2 of Shimura, the opening 5 is merely an aperture of the supply line 6. Opening 5 is not a mixing element since it is merely the pipe extending perpendicular to the screw with a pin nozzle for squirting the agent into the cylinder. The pin nozzle end is shorter than the screw flight and therefore has no mixing capacity. Therefore this pin nozzle is not a mixing element. The Examiner's proposal that the nozzle enables mixing is plainly wrong, because its shortness relative to the screw flight renders it devoid of any mixing capacity.

The Examiner has cited Hendry to allegedly show multiple mixing elements. Hendry does not show any mixing elements either but simply shows two oppositely located check valves for release of agent into the cylinder. These structures are clearly not mixing elements no matter what the Examiner calls them. They are outlets but have no structural capacity for mixing as is easily seen from Fig. 3 in Hendry. Neither Shimura nor Hendry together supply any teaching which would lead one skilled in the claimed invention. Each one of these references show a release control valve, which as is easily seen cannot function as mixing elements.

With respect to the Shimura and Hendry references, they do not show any "permeable portions", they are simply openings that are controlled by valves such that the valves are either open or closed. Permeability on the other hand implies a barrier, filter or similar across which material can flow.

With respect to claim 19, the Examiner has cited the Taylor reference to show that sintered or ceramic material can be used for release of the blowing agent. However, the Examiner has failed to demonstrate any motivation or suggestion how this feature could in any way be combined with a Shimura pin nozzle or a Hendry check valve plug.

For the reasons set forth above, it is applicant's contention that none of the references as combined by the Examiner teach or suggest the features of the present invention, as recited in claim 30.

Claim 19, which depends from claim 30 and therefore contains all the limitations thereof, patentably distinguishes over the applied prior art in the same manner as claim 30.

As for the rejection of the retained dependent claims, these claims depend on claim 30, share its presumably allowable features, and therefore it is respectfully submitted that these claims should also be allowed.

Withdrawal of the rejection of claims 15-18, 20-23, 26-29 and claim 19 under 35 U.S.C. §103(a) and allowance thereof are thus respectfully requested.

CITED REFERENCES

Applicant has also carefully scrutinized the further cited prior art and finds it without any relevance to the newly submitted claims. It is thus felt that no specific discussion thereof is necessary.

CONCLUSION

Applicant believes that when reconsidering the claims in the light of the above comments, the Examiner will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

None of the references discloses a device having mixing elements with permeable portions that are circumferentially spaced at the screw piston.

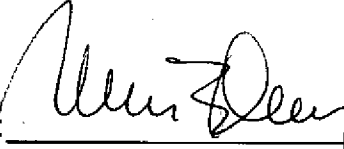
In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentable differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be

helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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